

a straight pipe section extending downward from an upstream end portion toward a downstream end of the exhaust manifold adapted to be connected to an exhaust purifying catalyst;

a first combined branch including an upstream end portion into which the first and fourth exhaust branches merge together, and a straight section extending downwards from the upstream end portion of the first combined branch to the upstream end portion of the straight pipe section and

a second combined branch including an upstream end portion into which the second and third exhaust branches merge together, and a straight section extending downwards from the upstream end portion of the second combined branch to the upstream end portion of the straight pipe section, the straight section of the second combined branch being longer than the straight section of the first combined branch.

19. (New) The engine exhaust apparatus as claimed in Claim 18, wherein the straight sections of the first and second combined branches are separated from each other by a wall, the straight sections of the first and second combined branches extend straight along an imaginary straight line into the upstream end portion of the straight pipe section, and the straight pipe section extends straight along the imaginary straight line.

20. (New) The engine exhaust apparatus as claimed in Claim 18, wherein the engine exhaust apparatus further comprises the exhaust purifying catalyst including a catalyst carrying carrier having thin walls extending in a longitudinal direction of the exhaust purifying catalyst, and the straight pipe section extends in such a direction as to cause an exhaust gas stream to flow in the longitudinal direction of the exhaust purifying catalyst, from the exhaust manifold into the exhaust purifying catalyst.

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 2, 5-10 and 14-16 have been amended. New claims 18-20 have been added. Claims 1, 4, and 17 have been cancelled without prejudice or disclaimer. Support for new

claim 18 can be found at least in original claim 12, and in paragraph [0029] of the specification. Support for new claim 19 can be found at least in Fig. 4, and in paragraph [0030] of the specification. Support for new claim 20 can be found at least in Fig. 10, and in paragraph [0034] of the specification. No new matter has been added.

This amendment adds, changes and deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Information Disclosure Statement

Applicants respectfully request that the Examiner consider and make of record any references listed on the Form PTO/SB/08 submitted with the Information Disclosure Statement filed on July 1, 2003, and return an initialed copy of Form PTO/SB/08 to applicants.

Rejections under 35 U.S.C. §§ 102 and 103

Claims 1-2 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,082,103 to Sugiura et al. (hereafter “Sugiura”). Claims 1, 4-5, 8-13 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,009,706 to Haneda (hereafter “Haneda”). Claims 3 and 14-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sugiura. Claims 3, 6-7 and 14-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Haneda. This rejection is moot with respect to claims, 1, 4 and 17, which have been cancelled. With respect to claims 2-3, and 5-16, applicants respectfully traverse these rejections for at least the following reasons.

Independent claim 8 is directed to an engine exhaust apparatus comprising an exhaust manifold. The exhaust manifold comprises “a first combined branch into which two of the exhaust branches merge together; and a second combined branch into which other two of the exhaust branches merge together, where the first and second combined branches merge together at the confluence portion into the straight pipe section.” Sugiura and Haneda fail to suggest the structure of the combined branches as recited in claim 8.

Sugiura discloses an exhaust manifold 10, with three exhaust pipes 1 extending from a cylinder block to a merging case 2 (Fig. 1, col. 4, lines 32-46). A catalyst 4 is connected to the outlet of the merging case 2 (Fig. 1, col. 4, lines 46-47).

Sugiura, however, fails to disclose at least the first and second combined branches as recited in claim 8. Sugiura discloses only three exhaust pipes converging into the merging case. Thus, Sugiura does not disclose both a first and second combined branch, each of which have two exhaust branches merging therein as recited in claim 8. Claim 8 is patentable over Sugiura for at least this reason.

Haneda discloses an exhaust manifold 2 with four branch pipes, 4-1 through 4-4, in communication with exhaust ports of an internal combustion engine (See Figures 1-7, for example, col. 4, lines 19-24). A large capacity pipe portion 20 is provided at the junction of the four branch pipes (col. 4, lines 36-39). The third branch pipe 4-3 is combined with the second branch pipe 4-2 at an intermediate position on the branch pipe 4-2 (col. 4, lines 56-58). Haneda also discloses another manifold in Figure 18 with four branch pipes, 304-1 through 304-4 which converge and an exhaust mounting flange 308 downstream of the branch pipes.

Haneda, however, fails to disclose a manifold structure with both the first and second combined branches as recited in claim 8. Even if the intermediate position on the branch pipe 4-2 where the branch pipe 4-3 is combined with the branch pipe 4-2 could be considered to be a combined branch, Haneda does not suggest another combined branch combining branch pipes 4-1 and 4-4. Thus, Haneda fails to disclose a manifold structure with both the first and second combined branches as recited in claim 8, and claim 8 is patentable thereover for at least this reason.

Moreover, it would not have been obvious to have modified Haneda to include both first and second combined branches as recited in claim 8. Haneda discloses that his invention is directed to a manifold of the one-point junction type (col. 1, lines 6-9). Thus,

modifying the Haneda structure to include two combined branches would be contrary to the intended purpose of Haneda, which is to be a one-point junction type structure.

Dependent claims 2, 3, 5-7, and 9-16 all ultimately depend from claim 1, and are patentable for at least the same reasons, as well as for further patentable features recited therein.

New claim 18 has been added, and is believed to patentably distinguish from Sugiura and Haneda. New claims 19 and 20 depend from claim 18, and are likewise believed to patentably distinguish from Sugiura and Haneda.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By Thomas G. Bilodeau

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5414
Facsimile: (202) 672-5399

Richard L. Schwaab
Attorney for Applicant
Registration No. 25,479

Thomas G. Bilodeau
Attorney for Applicant
Registration No. 43,438